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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,034

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Graham R. Eastham

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EXAMINER

WITHERSPOON, SIKARL A

ART UNIT

PAPER NUMBER

1621

DATE MAILED: 10/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/524,034

Applicant(s)

EASTHAM ET AL.

Examiner

Sikarl A. Witherspoon

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/9/05, 10/11/05, 7/21/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 4, 21, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is unclear what is meant in the last two lines of the claim regarding references to phosphine or phosphorus ad being amended. Also, the text recites that Q1-3 independently may be arsenic or antimony, and in cases wherein Q1 or Q2 is other than phosphorus, then the ligand is not a bidentate phosphine.

Regarding claims 3, 4 and 21, the phrase "such as" renders the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 22 recites the limitation "wherein the anion..." in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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Claim 30 is rejected under 35 U.S.C. 102(a) as being anticipated by Drent et al (Wo 01/68583).

If the product in the product-by-process claim is the same as or obvious from product or process of the prior art, the claim is unpatentable even though the prior product was made by a different process; *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Accordingly, the esters produced by the process taught by Drent et al, for example, methylpentanoate and 2-methylbutanoate (examples) anticipate the instant claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drent et al (WO 01/68583) and further in view of Wang et al (US 6,348,621).

The instant claims are drawn to a process for the carbonylation of a C3 to C20 ethylenically unsaturated compound by reacting said compound with carbon monoxide, in the presence of a source of hydroxyl groups, and a catalyst system comprising a Group VIII metal and a bidentate phosphine.

Drent et al teach a process for the carbonylation of ethylenically unsaturated compounds, specifically compounds having 3 or more carbon atoms, by reacting the

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unsaturated compound with carbon monoxide and a hydroxyl group-containing compound, in the presence of a catalyst system (abstract). The catalyst system comprises a source of palladium cations and a bidentate phosphine, said phosphine being of similar scope as that of the present invention. The process is carried out in the presence of an aprotic solvent (page 6). Preferred hydroxyl group-containing compounds are water and alkanols (page 8). The carbonylation is carried out at temperatures in the range of 50 to 250° C and pressures of from 1 to 100 bar (page 9).

The differences between Drent et al and the present invention are that Drent et al teach a temperature range that is outside the range of -30 to 49° C claimed by applicants, and Drent et al do not teach a supported catalyst.

Wang et al teach a very similar carbonylation process to Drent et al, except that Wang et al is concerned with the carbonylation of a C2 unsaturated compound. The catalyst system is virtually the same, and Wang et al teach a reaction temperature of 20-250° C and pressures from 1×10^5 to 100×10^5 N.m⁻².

In light of the combined reference teachings, the examiner contends that the instant claims are rendered prima facie obvious, as it would have been obvious to a person having ordinary skill in the art to conduct the carbonylation reaction at temperatures from 20 to 250° C (which includes a 29° overlap with applicants' temperature). A person having ordinary skill in the art would have employed conditions of temperature and pressure that provided the most desirable results, i.e., in the form of yield, conversion, selectivity, etc.

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Neither reference expressly mentions the use of a support material, such as silica, for the catalyst complex; however, it is well known in the art that such catalysts may be employed in conjunction with an inert support material, having a preselected surface area so as to provide optimal surface area for the catalytically active metal, and therefore enhance catalytic activity. As such, this limitation is also found obvious.

Claim 13 objected to because of the following informalities: The claim has subsequent text after the first period (.). The examiner suggested rewriting said text as a dependent claim. Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

saw

Sikarl A. Witherspoon
SIKARL A. WITHERSPOON
PRIMARY EXAMINER